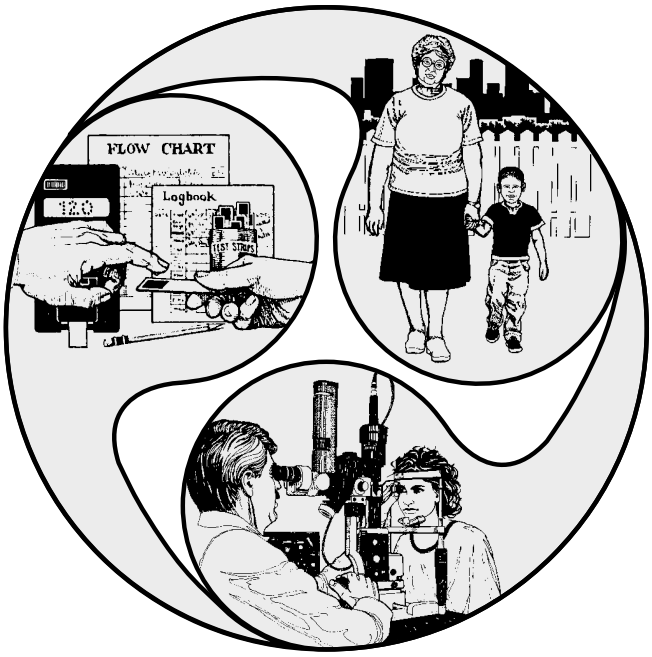
Diabetes

A Serious Public Health Problem

AT-A-GLANCE

1996



Translating Science Into Care

Those who suffer losses due to diabetes are not just statistics on a chart.
They are people whose talents and wisdom are needed and whose problems deserve our unified efforts.
Together we can join to make life more just and more joyful for generations to come.

David Satcher, MD, PhD, Director, Centers for Disease Control and Prevention

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

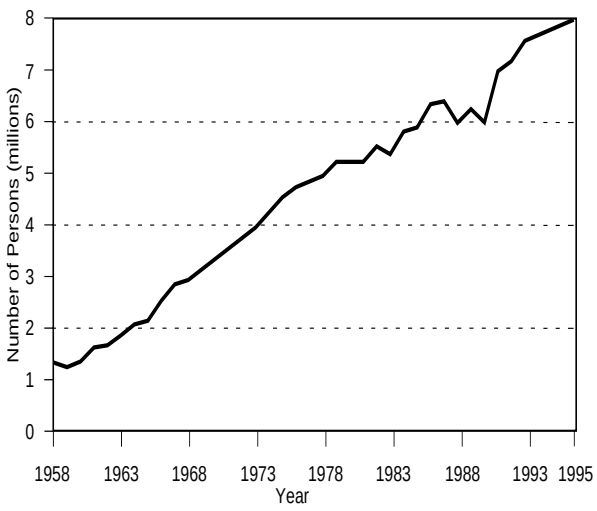
Is Diabetes a Serious Public Health Problem?

In 1995, about 16 million people in the United States had diabetes, but only 8 million had been diagnosed with the condition. The number of persons with diagnosed diabetes has increased from 1.6 million in 1958 to 8 million in 1995—a fivefold increase. Diabetes is the seventh leading cause of death in the United States, and it contributes to thousands of deaths each year. Individuals with diabetes are at increased risk for

- heart disease
- blindness
- kidney failure
- lower extremity amputations not related to injury

Diabetes and its complications occur among Americans of all ages and racial and ethnic groups. The burden of this disease is heavier among elderly Americans and certain racial and ethnic populations, including African Americans, Hispanics/Latinos, and American Indians. For example, more than 10% of elderly adults have been diagnosed with diabetes, and the prevalence of diabetes among various American Indian tribes ranges from 5% to 50%. A number of studies have also shown increased rates of the disease among certain Asian and Pacific Islander populations.

Number of Persons With Diagnosed Diabetes



Source: National Institutes of Health, 1995

What Is Diabetes?

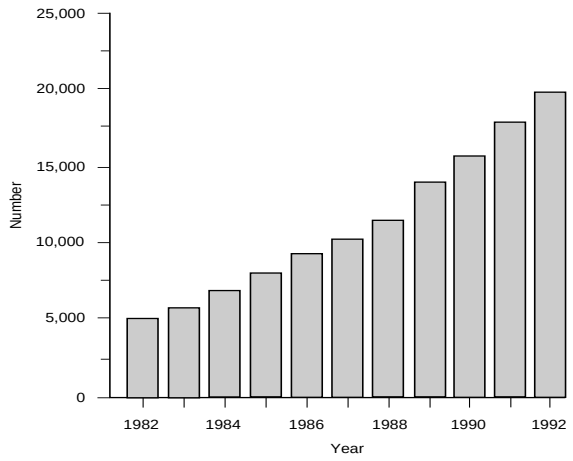
The term *diabetes* describes either a deficiency of insulin or a decreased ability of the body to use insulin, which is a hormone secreted by the pancreas. Insulin allows glucose (sugar) to enter body cells and be converted to energy. Insulin is also needed to synthesize protein and store fats. In uncontrolled diabetes, glucose and lipids (fats) remain in the bloodstream and, with time, damage the body's vital organs and contribute to heart disease.

Diabetes is classified into two main types: non–insulin-dependent diabetes mellitus (NIDDM) and insulin-dependent diabetes mellitus (IDDM). The most common type is NIDDM. It affects 90% of those with diabetes and usually appears after the age of 40. The other type—IDDM—affects less than 10% of those with diabetes. Although this type of diabetes can occur at any age, it most often appears in childhood or the teen years. The primary focus of the Centers for Disease Control and Prevention (CDC) is to translate scientific information about diabetes into strategic plans that help people prevent the complications of diabetes.

What Are the Economic Costs of Diabetes?

Diabetes imposes a heavy economic burden upon the nation each year. In 1992, an estimated $92 billion in direct and indirect costs were spent on diabetes. Contributing substantially to these costs are the complications of diabetes. For example, in 1992, the cost of treating kidney failure for 56,000 Americans with diabetes exceeded $2.1 billion. This figure did not include the costs associated with disabilities and premature death. In this same year, Medicare expenditures per person with diabetes on kidney dialysis averaged $38,700. Because kidney failure is increasing at an alarming rate, these costs are expected to rise.

New Cases of Kidney Failure Due to Diabetes, United States, 1982–1992



Source: U.S. Renal Data System, *USRDS 1994 Annual Data Report*

More than 60% of lower extremity amputations that are not related to injury occur among persons with diabetes. Approximately 57,000 diabetes-related amputations were performed in 1993. The direct costs of diabetes-related amputations are about $600 million annually.

The full burden of diabetes in terms of death, complications, and costs is not easy to measure. In fact, many hidden costs are associated with diabetes. These costs include a failure to recognize the role of diabetes in premature deaths and the unknown costs related to undiagnosed diabetes. Furthermore, for families and communities, the loss of human lives and abilities transcends numerical measures.

What Are the Benefits of Prevention?

The increasing burden of diabetes is alarming, but the *good* news is that much of the burden of this major public health problem can be prevented with early detection, improved delivery of care, and diabetes self-management education. For example,

- Currently, screening and treatment for eye disease among persons with diabetes is saving the federal government about $248 million annually. If *all* persons with diabetes received recommended screening and treatment, the annual savings to the federal budget could exceed $470 million.
- Women with preexisting diabetes deliver more than 18,000 babies each year. For every $1.00 invested in preconception care for these mothers, $1.86 can be saved by preventing birth defects.
- The Diabetes Control and Complications Trial, a national 10-year study that involved 1,441 volunteers with insulin-dependent diabetes, confirmed that good control of blood sugar prevented the onset or delayed the progression of eye, kidney, and nerve damage by at least 50%.

What Does CDC Do To Reduce the Burden?

CDC strives to increase awareness and education about diabetes, support early detection and treatment of complications, improve the quality of diabetes care, and enhance access to diabetes care by improving and expanding services.

To advance a common mission to reduce the burden of diabetes, CDC joins with state and territorial health departments in establishing partnerships for populations at increased risk for diabetes and its complications. CDC and its partners use the following approaches:

They define the burden and develop surveillance systems to—

- identify high-risk groups
- monitor health outcomes and indicators of the quality of health care recommended for persons with diabetes
- provide data that can be used to formulate health care policy
- evaluate progress in disease prevention and control

They develop new approaches such as innovative community-based programs—

Project DIRECT—CDC is collaborating with the state of North Carolina to evaluate the effectiveness of community-based public health approaches in reducing the burden of diabetes.

Diabetes Today—This program provides health professionals and community leaders with the skills to mobilize communities and to develop appropriate interventions. One of the outcomes of this course is a strategic plan that is community owned and culturally relevant to the local population.

Latino Diabetes Initiative for Action (Latino DIA)— In 1995, CDC launched this initiative to develop culturally relevant diabetes prevention strategies for Latino communities. CDC enlisted the National Latino Expert Workgroup to collaborate in planning, prioritizing, implementing, promoting, and evaluating strategic Latino DIA activities to narrow the disparity of diabetes in the Latino community.

They implement effective programs—

CDC works with state- and territorial-based diabetes control programs to reduce the complications associated with diabetes. The following are just a few examples of such activities:

The Maine Diabetes Control Program implemented a diabetes outpatient education program in more than 30 hospitals and health centers throughout the state. In a 3-year period, this state education program resulted in a 32% reduction in hospital admissions—a savings of $293 per participant.

The Michigan Diabetes Control Program's Upper Peninsula Diabetes Outreach Network (UPDON) established a program with hospitals, health departments, and home care agencies that improved the quality of diabetes care and education. The participants in the program experienced a 45% lower rate of hospitalizations, a 31% drop in lower extremity amputations, and a 27% lower death rate than did nonparticipants. This program has been replicated in five new outreach networks throughout the state.

The Texas Diabetes Control Program recently formed the Managed Care Work Group to establish minimum standards of care and outcome measures for Texans with diabetes. A cost-benefit analysis by one of the collaborating partners determined a break-even point in 2 years with savings to result thereafter. Other partners are joining as they consider the quality of care issues and realize the cost benefit.

National Partnerships

CDC joins with government agencies, voluntary and professional organizations, academic institutions, and community groups to

- provide data for sound public health decisions
- inform the public about the burden of diabetes
- ensure that current research findings are translated into effective clinical and public health strategies to reduce the burden of diabetes
- promote assurance of optimal diabetes care and education for all persons living with diabetes in the United States

Diabetes presents both a challenge to and an opportunity for public policymakers, health care providers, community leaders, and individuals with diabetes to apply prevention strategies known to make a significant impact. Recent studies in diabetes have confirmed that prevention of complications of diabetes is a strategy that works. Such strategies benefit individuals, families, communities, health organizations, and all those who are financially and economically concerned about the impact of diabetes and its complications.

**For more information, please contact the Centers for Disease Control and Prevention,
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